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ABSTRACT

An individualized learning package provides step-by-step instruction in the fundamentals of the etching process. Thirteen specific behavioral objectives are listed. A pretest, consisting of matching 15 etching terms with their definitions, is provided along with an answer key. The remainder of the learning package teaches the 13 steps of the process in the following sections: preparing the plate, applying the hard ground, drawing the image, stopping-out the back side, using acid, cleaning after biting, heating the plate, inking, wiping, preparing the paper, using the press, removing the print, and cleaning after printing. Each section lists supplies and tools needed and gives the steps of instruction. Several checkpoints (inspections by the instructor) are provided for in the course of the learning package. The evaluation consists of taking both the plate and the print to the instructor for a final checkpoint. Three books on etching and printmaking are listed in the brief bibliography. This document is part of a collection of materials from the Iowa Area Education Agency 7 Teacher Center project. (EM)

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INDIVIDUALIZED LEARNING PACKAGE ABOUT ETCHING

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A

LEARNING PACKAGE TO

INTRODUCE YOU

TO

ETCHING

Directions

This learning package has been developed for individual instruction use. When you have completed this learning package, you will have a knowledge of the fundamentals of etching.

To begin your self-instructed package, turn to page one. Follow the instructions given with each section and do not proceed until each section has been completed in sequence.

Michael J. Sauer

INTRODUCTION

and

SPECIFIC BEHAVIORAL OBJECTIVES

This package has been designed to instruct and guide you, step-by-step, in the basic fundamentals of the etching process.

After completing this package you will be able to:

1. Properly file the edges of your copperplate until it is smooth to your touch.

2. Apply with a brush an even coat of etching hard ground over the entire front plate surface.

3. Draw through the hard ground with a sharp instrument, exposing the plate surface.

4. Coat the entire backside and edges of the copperplate with hard ground.

5. Place your plate in the acid, periodically removing it to pin-check the extent of the acid etching on the exposed areas until properly bitten.

6. Completely remove the hard ground from the entire plate with the aid of kerosene.

7. Place your plate on the hot plate and allow it to get warm enough to facilitate inking.

8. Remove plate from hot plate and, using a circular motion, until the top surface of the plate is clean with ink remaining only in the etched places.

9. Wipe the plate with a tarlatan, using a circular motion, until the top surface of the plate is clean with ink remaining only in the etched places.

10. Properly soak and blot the paper.

11. Properly place the plate and soaked paper on the press bed and run them through the press.

12. Properly remove paper from plate surface.

13. Thoroughly clean the entire plate with kerosene, completely removing the ink.

Before starting the first section on preparing your plate, turn to page 3 and test your beginning knowledge of etching terms.

PRE-TEST

Match the following terms:

1. Bath
2. Dutch Mordant
3. Nitric Acid
4. Tarlaton
5. Pulling
6. Heater
7. Dampening
8. Bevel
9. Etching
10. Plate Mark
11. Proof
12. Ground
13. Etching Tool
14. Biting
15. Dauber

a. a mesh rag used for wiping across ink from metal-plate

b. the action of printing from the plate onto the paper

c. a preliminary impression for examination of various steges until final stage is reached

d. impression in the paper left by the pressure of the plate edges

e. a biting agent most commonly used

f. a hot plate for warming metal plates for applying ground and for inking

g. covering film on an etching plate which resists the action of acids

h. pointed metal tool used to penetrate the ground on a plate to expose metal for acid action

i. graphic printmaking process

j. an acid mixture for biting etching plates

k. moistening of batches of paper

l. a pad of silk or leather used to "push" printing ink into etched lines

m. action of bath or metal plate

n. slope of the edge of etching plate

o. liquid used for acid bath

Turn to page 4 to check how much you know.

ANSWERS

1. o
2. j
3. e
4. a
5. b
6. f
7. k
8. n
9. i
10. d
11. c
12. g
13. h
14. m
15. l

Turn to page 5 to start Section I.

SECTION I

Preparing Your Plate

Supplies and Tool Needed:

1. copperplate
2. cleanser and towels
3. metal file

Steps of Instruction:

1. Get a copperplate from the instructor.
2. Beveling the plate
   The edges and corners of the plate should always be beveled on both sides. If done in the proper manner it will prevent the cutting of your paper or felts. Beveled plates will also produce a cleaner and better-looking print.

   a. Go to the file drawer and pick out a metal file. Take it back to your work space.
   b. Place your copperplate on the edge of the table. The plate should over-lap the edge a little to prevent filing the edge of the table in addition to the plate!
   c. While holding the plate firmly with one hand, file the edge of your plate with a downward stroke. <u>Do not file up and down--use only the downward stroke.</u>
   d. Bevel in the above manner until smooth to your touch.

* Check point--Have your plate edges inspected by the instructor.

3. Take your plate to the sink and thoroughly wash it with a cleanser, taking care not to scratch the surface of the plate. All grease and dirt must be removed at this time.
4. After cleaning, dry the plate thoroughly, taking care only to touch the plate on the edges. Touching the surface with your hands leaves a film of oil that will interfere with the etching process.
5. Return the file to the proper drawer.
6. Continue on to Section II.

SECTION II

Applying Hard Ground

Supplies and Tools Needed:

1. hard ground
2. 2" or 3" soft-bristled brush (paint)
3. kerosene

Steps of Insturction:

Any acid-resistant coating that is used to make an etching is called a "ground". There are various different grounds that can be used equally well. For our purpose; however, you will be working with a liquid hard ground. This is used on the plate to act as a stop-out (block-out) from the acid bite. Only the areas left open by drawing through the coating are bitten by the acid.

1. Go to the shelf and get the liquid hard ground.
2. Go to the drawer and get a 2" or 3" soft-bristled paint brush and take them both to your work space.
3. Place a thin, even coat of the ground over the entire front surface of the plate. It is difficult to control your drawing on a ground which is thick and unevenly applied. Therefore, care must be taken in this application.

* Check-point--Have your hard ground application checked by the instructor.

4. Leave your plate in a protected area to allow the hard ground to thoroughly dry. Care must be taken from now on in handling your plate so that the hard ground does not become chipped.
5. Thoroughly clean the brush with kerosene.
6. Return all supplies to their proper places.
7. Continue on to Section III.

SECTION III

Drawing the Image

Supplies and Tools Needed:

1. sharp instrument
2. idea (subject matter for print)

Steps of Insturction:

It is important to use a sharp instrument when drawing your image onto your copper plate. This image idea should be carefully planned out before actually beginning the drawing on the plate surface. But if a mistake should occur, never fear, the hard ground is very near! With hard ground as your stop-out, you can block out certain areas and draw the image over.

1. By now, you should have a preliminary sketch of your idea. If you do not have this drawn out on paper, do so now.
2. Go to the drawer and pick out a sharp instrument to use in drawing your image. Take this back to your work space.
3. Begin drawing your image on the hard ground surface. Take care not to press too hard while drawing as the plate surface may become scratched.
4. After you have completed your drawing on the plate surface, return your drawing instrument to the proper drawer.
5. Continue on to Section IV.

SECTION IV

Stopping-out Back Side

Supplies and Tools Needed:

1. hard ground
2. 2" or 3" soft-bristled brush
3. kerosene

Steps of Instruction:

Again, like in Section II, you will be applying an acid-resistant coating, but this time your application will be on the reverse side of your drawing. Once again, the hard ground is used on the plate to act as a stop-out (block-out) from the acid bite. This is economical for you, because at a later date you may wish to do another print on this back side.

1. Go to the shelf and get the liquid hard ground.
2. Go to the drawer and get a 2" or 3" soft-bristled paint brush and take them both to your work space.
3. Place a thin, even coat of the ground over the entire back surface, and the four edges of the plate.
4. Leave your plate in a protected area to allow the hard ground to thoroughly dry. Remember, care must be taken in handling your plate to avoid chipping the hard ground.
5. Thoroughly clean the brush with kerosene.
6. Return all supplies to their proper places.
7. Continue on to Section V.

SECTION V

Acid

Supplies and Tools Needed:

1. acid
2. acid tray
3. blower
4. funnel

(ACIDS ARE DANGEROUS! Caution should be taken when using acids. They are stored in heavy glass containers with wax-sealed plastic caps. You should never handle the containers with wet or slippery hands. Above all, never hurry while handling acid.)

For our purposes, there will be two kinds of acids available:

1. Dutch Mordant-which should be used most of the time
2. Nitric Acid-which should be used only when you wish a fast and deeper bite

Steps of Instruction:

1. Take your plate over to the acid tray and place your plate in the tray.
2. Go to the shelf and pick out the desired acid and take it over to the tray.
3. Pour slowly, being careful not to spill the aicd or inhale its fumes. Fill the tray enough to cover the entire plate surface.
4. Turn on the blower to provide proper escape for the fumes.
5. Leave your plate in the acid until the desired degree of bite is achieved. You should periodically check the progress of your bite by removing the plate and checking the etched erea with a pin-head.

* Check point--Have the instructor help you with your checking of the biting to avoid over-biting (or under-biting) and hard ground breakdown.

6. After biting is accomplished, remove your plate from the acid.
7. Rinse off both your plate and your hands.
8. Turn off the blower.
9. Return the acid to the proper container by using a funnel to prevent spilling.
10. Rinse out the acid tray.
11. Continue on to Section VI.

SECTION VI

Cleaning After Biting

Supplies and Tools Needed:

1. kerosene
2. sawdust chip box

Steps of Instruction:

When you are finished biting your plate, you must remove all hard ground on both sides of your plate.

1. Take the plate and go to the sawdust chip box.
2. Now, place your plate in the sawdust chips. Pour some kerosene in your plate.
3. Rub the sawdust chips with your hands over the kerosene plate.
4. Repeat step 3 until all hard ground is removed from both sides of your plate.
5. Before leaving the sawdust box, wipe off excess kerosene and sawdust chips to prevent clogging the drain.
6. Place the plate in the sink and wash thoroughly with a cleanser and water.
7. Dry your plate thoroughly.
8. Continue on to Section VII.

SECTION VII

Heating the Plate

Supplies and Tools Needed:

1. hot plate

Steps of Instruction:

A hot plate is needed to facilitate the inking and wiping (Sections VIII and IX) of your plate.

1. Turn on hot plate to 150-200 degrees Fahrenheit
2. Place plate on top of hot plate and allow it to thoroughly heat.
3. Continue on to Section VIII.

SECTION VIII

Inking

Supplies and Tools Needed:

1. hot plate
2. ink
3. dauber

Steps of Instruction:

It is important to have your plate heated before inking. The heat makes the ink loose so that it works into the lines better and wipes off the surface easier. The dauber is used to work the ink into the lines of the plate.

1. Take your plate off the hot plate and place it on a table near the hot plate. Inking should never be done on the hot plate. The plate should remain warm throughout the entire inking so when the plate cools, place it again, for a few minutes, on the hot plate until warm. Then remove and continue inking.
2. Get a dauber and a can of ink.
3. Dip the dauber into the ink and work it into the plate lines in a circular motion. Make sure you cover the entire front plate surface with ink to insure an even total quality.
4. Scrape the excess ink from the dauber into the ink can.
5. Replace the lid on the ink can and return it and the dauber to the shelf.
6. Continue to Section IX.

SECTION IX

Wiping

Supplies and Tools Needed:

1. three tarlatans
2. paper towels

Steps of Instruction:

The best material to use in wiping your plate is called tarlatan. When new, tarlaton is a coarse, loosely woven material. To prepare this for usage, take a piece and rub it together until it loses its stiffness. Then form this into a ball-shape.

1. Take your plate off the hot plate and place it on a nearby table.
2. Taking the dirty tarlaton, wipe in a circular-type motion very lightly. Cover the entire top plate surface in this manner. When your plate cools, return it to the hot plate until warm and then continue on.
3. Taking the second tarlaton, which is not quite so inky, wipe over the entire top surface in the same manner as above.
4. Taking the clean tarlaton, lightly wipe over your top plate surface, removing any remaining ink on the raised surface. If too much ink is wiped off, the print will not be clear and precise.
5. To insure a clean plate surface, take a paper towel and wipe lightly.
6. Place the tarlatons back on the shelf.
7. Place the wiped plate back on the hot plate.
8. Continue on to Section X.

SECTION X

Preparing the Paper

Supplies and Tools Needed:

1. bath
2. paper
   a. cheap paper for proofing
   b. good paper for final edition
3. blotters
4. tabs

Steps of Instruction:

The paper used for printing should be dampened slightly to soften the fibers and to facilitate printing. Care must be taker not to have the paper too wet when printing or the excess water will cause a spotty print.

1. Place clean water into a clean paper bath if necessary.
2. Place the paper into the water and allow thorough soaking.
3. While the paper is soaking, prepare your paper blotters. These can be merely two dry sheets of paper.
4. Using paper tabs to protect the corners of the wet paper from your inky fingers, remove the paper from the bath, allowing the excess water to drain back into the pan.
5. Place the wet paper between two dry blotters.
6. Continue on to Section XI.

SECTION XI

Using the Press

Supplies and Tools Needed:

1. press
2. felts
3. bottom and top cover sheets

Steps of Instruction:

Gaining a knowledge of the press is accomplished mainly through a trial and error method. You can determine the pressure of the press through your own sense of touch. If you must force the press bed, then you know there is too much pressure. If you have any questions or doubts, please ask the instructor.

1. Place the bottom sheet of paper on the press bed for protection.
2. Place the heated copperplate on the protection sheet.
3. Using the tabs again, center the blotted paper over the plate.
4. Place the cover sheet over the back of the blotted paper.
5. Now take the two felts, placing them over everything on the bed. These felts are used for the protection of the press bed and rollers.
6. It is important to run the bed through the press in an even and continuous motion.
7. Continue on to Section XII.

SECTION XII

Removing the Print

Supplies and Tools Needed:

No additional supplies or tools are needed to continue with this section.

Steps of Instruction:

Often times, due to the pressure caused from running the print through the press, the paper may become stuck to the plate and rip if care is not taken in its removal.

1. Remove the felts and return them to their proper places.
2. Remove the cover sheet.
3. Using the tabs to protect the corners of the print from your inky fingers, remove the print carefully.
4. Either hang the print or lay it in a protected area for its drying.
5. Remove the bottom protection sheet from the press and discard.
6. Turn off the hot plate.
7. Continue on to Section XIII.

SECTION XIII

Cleaning After Printing

Supplies and Tools Needed:

1. kerosene
2. sawdust chip box

Steps of Instruction:

When you have finished printing your plate it should be cleaned thoroughly. If the printing ink is left to dry in the etched lines, it could give a poor print or not print at all the next time you go to print from it.

1. Take your plate and go to the sawdust chip box.
2. Place your plate in the box and pour some kerosene on it.
3. Rub the sawdust chips with your hands over the kerosened plate.
4. Repeat step 3 until all printing ink is removed from the etched surfaces.
5. Before leaving the sawdust chip box, wipe off the excess kerosene and sawdust chips to prevent clogging the drain.
6. Place the plate in the sink and wash thoroughly with cleanser and water.
7. Dry the plate thoroughly.
8. Make sure the entire mess has been cleaned up and that everything has been returned to the proper places.

EVALUATION

You have now completed the entire elementary etching process. Take both your plate and print, for a final check point, to the instructor.

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